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ABSTRACT

With the emergence of new technologies, there are many concerns about the use of interactive technology in the art classroom. The literature suggests that interactive media such as the Internet and electronic mail can enhance the learning experience for the art student. Learning is individualized to accommodate students' cognitive styles and provide alternatives for different interests. Students become active learners, and the teacher acts as a facilitator for the students' learning. The art room becomes a global environment where communication is quick and worldwide, yet personal. While great benefits can be gained by using this technology in the art classroom, the attitude of the teacher and the availability of computers must be considered. This study explored the effectiveness of the Internet as an instructional tool. Eighth grade art students participated. Data from an attitude inventory taken before and after the project formed the basis for assessing students' attitudes toward the interactive media and art history research. Qualitative data from interviews with randomly selected students were coded to provide insight into students' thoughts and feelings about using the interactive media to learn about art history. Additionally, data were collected while observing students as they engaged in the Internet-based art history research project. (Contains 17 tables, 1 figure, and 9 appendixes, including permission forms, resources for art educators, fieldwork notes, surveys and handouts, interview questions and transcripts, and coded interviews.) (Author/BT)

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ED 449 112

INTERACTIVE TECHNOLOGY: A TOOL FOR STUDENT-CENTERED INSTRUCTION IN MIDDLE SCHOOL ART EDUCATION

A Thesis

Presented to the Faculty of the School of Art

East Carolina University

Michelle H. Harrell

In Partial Fulfillment

Of the Requirements for the Degree

Master of Arts in Education

by

Michelle Hardison Harrell

April 2000

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Abstract

Michelle Hardison Harrell. INTERACTIVE TECHNOLOGY: A TOOL FOR STUDENT CENTERED INSTRUCTION IN MIDDLE SCHOOL ART EDUCATION. (Under the direction of Dr. Cynthia Bickley-Green) School of Art, East Carolina University, April 2000.

With the emergence of new technologies, there are many concerns about the use of interactive technology in the art classroom. Literature suggests that interactive media such as the Internet and electronic mail can enhance the learning experience for the art student. Learning is individualized to accommodate students' cognitive styles and provide alternatives for different interests. Students become active learners, and the teacher acts as a facilitator for the students' learning. The art room becomes a global environment where communication is fast, quick, and worldwide yet personal. While great benefits can be gained by using this technology in the art classroom, the attitude of the teacher and availability of computers must be considered. This study explores the effectiveness of the Internet as a tool of instruction. Data from an attitude inventory taken before and after the project formed the basis for assessing students' attitude toward the interactive media and art history research. Qualitative data from interviews with randomly selected students was coded to provide insight into student's thoughts and feelings about using the interactive media to learn art history. Additionally, data was collected while observing the students as they were engaged in the Internet-based art history research project.

INTERACTIVE TECHNOLOGY: A TOOL FOR STUDENT-CENTERED INSTRUCTION IN MIDDLE SCHOOL ART EDUCATION

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Chapter 1

Introduction

In 1994, fewer than 100,000 people could access the Internet. Today there are more than 150 million on-line across the world (Irving, 1999). Changes in technology are more than just a technology revolution; it's a worldwide paradigm shift brought about by technology (Gregory, 1995). The way many people shop, research, and check what's on television has changed because of the Internet. Students, particularly middle school students, have a natural attraction to interactive technology as if it was a game. By finding a way to use interactive technology in the art classroom, students become self-motivated and more interested in learning about art history and criticism.

Statement of the Problem

The interest and excitement created by using the Internet as a resource may lead middle school students to learn about art history and criticism. Exploring a particular artist's style through hands-on studio projects is effective, but the teacher is still the source of information about these artists, styles, and time periods. Artist research projects are excellent ways to allow students to become familiar with one artist's artwork and life. However, many school libraries have few or sometimes no books about living artists or artists from minority ethnic groups. Adding Internet resources to the research assignment greatly expands the students' choice of artists and resources. The Internet, as a research tool, is a broader based resource and may entice students to become active learners when studying art history and criticism. Using the Internet as a classroom teaching tool generates many questions. Can the Internet provide more resources for these studies than

the art classroom and school library? Can the Internet or other interactive media motivate students in becoming active learners of art history where learning is individualized to meet their needs and interests? How effective is the use of interactive media in helping students feel more in control of their learning?

Purpose of the Research Project

Although many art educators have used technology in their classrooms for the past fifteen years, the technology has been more oriented towards graphic design and as a media production tool (Grandgennett & Heise, 1996). While art production is essential, it is only one of the components of a discipline-based art education [DBAE], which also includes art criticism, art history, and aesthetics. How can interactive technology be used as a tool for instruction in these disciplines as well? Is the art room the place for such technology? Can multiple linked systems offer a more student-centered learning environment than linear text from a book? The purpose of this study is to show (1) the effect of interactive technology upon students in a middle school art classroom; (2) what it means for participants to be in an electronic environment; and (3) how the students understand their learning of art history when they use interactive technology.

Significance of the Problem and the Justification for its Investigation

David Ross, director of the Whitney Museum of Art, once commented that the status of the Internet is where video was in 1968. He wrote, "it's not going to change or replace art. It's simply creating new ways of communicating about art in a new medium (Lovejoy, 1997)." New media in art is being created via these kinds of technologies such as satellite transmissions, interactive video works, and virtual reality projects. Viewers

can interact with works of art as never before rather than just viewing artworks in a traditional museum setting. An increasing number of art teachers are using the Internet for their own professional growth and for teaching art in their classroom (Burton, 1997). More research is needed to understand the effectiveness of interactive media in the art classroom and to explore how teachers can use the Internet as a tool for discipline-based visual art instruction. The results from this research will help practitioners to make wise spending decisions, create richer curricula, and provide better instruction for secondary art students.

National Art Education Association [NAEA]Task Force Agenda

This research meets two of the recommendations of the National Art Education Association Research Agenda. The NAEA task force created these recommendations from issues and practices that the task force believes will develop into the visual arts education research agenda of the 21st century. This research in internet technology and art history instruction is connected to Recommendation 5 that addresses instruction issues and Recommendation 7 that addresses issues with student learning.

Recommendation 5 addresses issues of instruction that include instructional and technological resources as well as specific teaching methods. This research aims to find ways to use interactive technology for a more student-centered approach to instruction. This research examines a teaching method that utilizes Internet resources and measures its effectiveness for stimulating student motivation. Because student-centered instruction is so closely linked to student learning, the following recommendation is also met.

Recommendation 7 addresses issues that are related to student learning that includes learning strategies and styles and the impact of art instruction. One purpose in this study is to find effective ways to motivate and excite students about learning art history and criticism. Literature suggests that interactive technology such as the Internet may allow students to become active learners of art history where learning becomes individualized to meet their needs and interests. This research also aims to prove that interactive media could help students feel more in control of their own learning.

Limitations

This study is limited to conditions in the middle school where the researcher teaches art in Garner, North Carolina. Notes taken through observing the art class, interviewing students, and student questionnaires were used to collect the data. Subjects were students that had chosen art as their elective and were not chosen by random sampling. These students represent a sample of convenience. However, the data gives insights and understanding into the effect that the interactive technology had on student learning in the art classroom.

Assumptions

In developing the instruments used to collect data, it is assumed that the questions were pertinent and relevant to the study and the data collector would provide sufficient data for analysis. It was also assumed that these behaviors observed of the students by the data collector and answers on questionnaires, surveys, and in the interviews were honest and accurate and that the students were not giving a false impression for the benefit of the teacher or the data collector.

Definitions of Important Terms

Interactive technology refers to any form of technology that allows the users to interact with it and/or other users. This includes electronic mail [e-mail], electronic facsimile [FAX], teleconferencing, and many other forms of media. Large amounts of graphics, text, sound clips, and video clips can be accessed from a desktop computer. The kind of interactive technology used in this study was mainly the Internet. While there is a large and growing vocabulary related to computer literacy and art education instructions, some of the most common definitions used in this study are set forth below. For the purpose of this investigation, the following definitions for words and phrases were used:

1. *Student centered instruction*: instruction that focuses on the student as an active learner and accommodates that individual student's needs rather than merely covering chapters in a textbook.
2. *Interactive technology*: technology that involves more than one computer such as networks like the Internet and the World Wide Web. These networks allow people to interact with other computers miles or countries away from one another.
3. *Electronic Mail [e-mail]:* a system for sending mail using the Internet or some other network.
4. *Web browser*: a software program such as Netscape Navigator that is capable of reading the links and establishing a communication with other networks.
5. *Uniform Resource Locator [URL]:* the address of a Web site that has a specific structure that helps identify its address.
6. *Internet:* a network of computers linked to one another.

7. *World Wide Web:* the corner of the Internet that allows users to connect with hypertext links. Also, referred to as "the web" or the "WWW."
8. *Search Engine:* programs activated by a request to seek sites by subject selection. These search engines usually ask users for a keyword and search Web sites using the META tag that is included at the top of the html code of the Web site.
9. *Compact Disc Read-only Memory [CD-ROM]:* a compact disc often containing images, data, audio, and video files that can by read by a computer.
10. *Hypertext [link]:* text that links one document to another.
11. *HyperText Transport Protocol [HTTP]:* the protocol that allows for hypertext files to be transferred across the Internet.
12. *HyperText Markup Language [HTML]:* the coding used to create a web page that allows a collection of connected networks to communicate.
13. *Download:* to transfer data from a remote computer to the computer being used. The time for data to download depends on the amount of text or images, the browser, the speed of the modem, and the server or service provider.
14. *Service Provider:* the company that provides access to the Internet such as America Online, Prodigy, and Mindspring.
15. *Webquest:* an inquiry-oriented lesson or series of lessons where some or all of the resources that learners use comes from on the Internet (Bernie Dodge as cited in Schrock, 2000).

Chapter 2

Review of Literature

Interactive technology refers to any form of technology that allows the users to interact with it and/or other users. This includes Internet, CD-ROMs, e-mail, FAX, teleconferencing, and many other forms of media. By using interactive technology such as the Internet, large amounts of graphics, text, sound clips, and video clips can be accessed from a desktop computer. Technology opens up a whole new realm of possibilities in communications, manipulation of images, image exchange, and exploration. This chapter considers general writing related to historical background of interactive technology, interactive technology's effect on student-centered-instruction, and the possibilities for this technology in a middle school art classroom.

Historical Background of Interactive Technology and Art Education

Since Walter Benjamin's essay on "The Work of Art in the Age of Mechanical Reproduction" in 1936, artists have questioned the role of technology in twentieth century art (Lovejoy, 1997). With the invention of the technology of the camera in the nineteenth century, painters shifted from reproducing a realistic image to abstracting the image. Eventually, photography was established as an art form through the artwork of Alfred Steiglitz, Ansel Adams, Dorothea Lange, and others. Television and film continued to alter paradigms of representation.

In the 1960's, Ted Nelson, a graduate student at Harvard studying sociology, attempted to create a text-handling system before word processing had been invented. Although his efforts were unsuccessful at the time, his frustrations with the limited linear

computer-based programs led him to develop the beginnings of interactive media (Keep & McLaughlin, 1995). Since that time, government and educational agencies have created webs or networks to communicate. This connecting communication system has grown into the Internet.

Interactive Technology in Art Education

Whereas technology has been part of the art classroom for the past 15 years, it has been more oriented towards graphic design and as a media production tool (Grandgennett & Heise, 1996). The issue of using interactive technology to teach art history and criticism is still emerging and fairly new in most middle school art classrooms like the one in this study. Technology cannot replace effective teaching and meaningful experiences in the arts; it is a tool that can empower teachers and students to explore and enhance their learning about the arts in exciting new ways (Duke, 1991). Many programs in higher education and some secondary schools have used interactive technology and have examined its effectiveness and benefits in learning art history.

In the fall of 1997, Dr. David Burton conducted a survey with 249 art teachers to provide a baseline about what technology resources are available to art teachers, their opinions, and the ways those resources are used. Almost half (47.9%) of teachers surveyed considered themselves "computer literate" and a third (33.33%) used e-mail several times weekly. The use of the World Wide Web for their students' art assignments was considerably lower. Only .40% of teachers replied that their students use the Internet several times weekly for art assignments while 46.98% of teachers

replied that their students "rarely or never" use the World Wide Web related to their art assignments.

In the past few years, art educators have experimented with interactive technologies to find nonlinear instructional programs for a more student-centered approach to art instruction. At the University of North Texas, an interactive multimedia computer program was created for the first semester of an art history survey course (Gleeson, 1997). Although the project did not yield higher test scores, students showed interest in learning art history. Bickley-Green (1997) examines the use of interactive multimedia and video technologies in William Stinson's high school art class. This program at Rose High School in Greenville, N. C., seems to be a successful model of technology being used to make the school experience more human and the art program more central to the lives of everyone at the school.

In his paper presented at the National Art Education Convention in Los Angeles, Craig Roland discusses ten applications of using the Internet as a tool and resource in a school art program (Roland, 2000). The first of these was communicating with other art teachers such as the ArtsEdNet Talk (see Appendix B) where art teachers from across the world can ask questions and share ideas with other art teachers. The second was collaborating with other art teachers on student art exchanges and joint classroom project. A short compilation of "key pal" resources are listed in Appendix B where art students can send digital images of their work across the world to exchange with other students. The third application for the Internet was promoting the school program. The fifth was to use the Internet to support instruction as in finding lesson plans and art images from

museum web-sites. The fifth utilization of the Internet is taking "virtual field trips" to museums that students wouldn't normally visit. The sixth benefit was promoting student conversation among peers via the Internet. The seventh use was students leaning from artists and other art experts. Student research on the Internet and active learning in art was the eighth reason for using the Web to enhance art instruction. The ninth benefit was actually publishing student artwork and research on the web. The final benefit, according to Craig Roland, was allowing students to use the web for creative expression in making their own web-sites.

Woody Duncan (2000), a middle school art educator in Kansas, incorporates many ways for using the Internet in his art classroom. He is currently coordinating the "Living Artist Collaboration" where students from various schools select and interview contemporary artists creating an oral history to be published on the Internet. In this research, the web is used as a tool to recruit teachers to be part of this research collaboration, communicating between teachers involved in the project, submitting data and publishing existing data on the project.

Student Centered Instruction

In this study, the researcher measures and describes aspects of the effect interactive technology has on student-centered instruction. As defined earlier, student-centered instruction appeals to different learning styles, provides alternatives for various interests and promotes active learning.

Whether a student is 'left-brained' or 'right-brained,' the Internet offers choices that assist that learning style. Howard Gardner has noted that "technology can be used to

maximize the chance that students will learn in ways that are comfortable to them" (Dunn, 1996). In fact, Gardner's theories of multiple intelligence (Gardner, 1983) could be applied to using interactive technology to illustrate its flexibility in accommodating various learning styles. These seven intelligences include:

1. Visual: Web-sites are designed to be stimulating through the use of color and images that students can often enlarge to get a closer view. The Internet allows for millions of art historical images to be accessible by the student that would not be possible in an average middle school art classroom.

2. Kinesthetic: Students feel they can manipulate where they "go" virtually on the Internet rather than sitting in a classroom viewing slides or reading a book.

3. Logical: Classification, calculations, and critical thinking are encouraged because the organization of the Internet and non-linear network of hyperlinks.

4 and 5. *Auditory and Linguistic:* Through audio clips and video clips students may listen to music or listen to a speaker give insight to the text and images. For example, at Modern Masterworks at http://hyperion.advanced.org/17142/home.shtml, a student can listen to Dr. Nancy Troy, an art history professor at University of Southern California, give commentaries on movements and artists through an audio file.

6. Interpersonal: Through interaction with others through e-mail, chat rooms, and message boards, students can interview living artists, ask questions of gallery owners, or post questions for others who may be researching the same artist.

7. Intrapersonal- Learning is meaningful and reflective to the student because the student can choose to explore the type of information that fits his or her interests.

By using the Internet to implement instruction, art teachers can not only accommodate individual cognitive styles but also provide alternatives for differing interests (Grandgennett & Heise, 1996). Instruction is focused on the student's needs rather than 'covering' time periods and artistic styles. For example, rather than having students look at a poster or page from their textbooks for an example of Impressionism, students can use a search engine to find artists and artworks relating to that movement. One student may be more interested in American painter Mary Cassatt's mother and child paintings while another may find more relevance in Monet's garden at Giverny, France. One student may rather read the text in their native language of Spanish while still another may prefer to view artworks in a virtual gallery before reading about Impressionism. Through individualized quests for knowledge, interactive technology allows for diversity in the ways students learn about art. Technology encourages the student to take control of his/her learning.

When students use interactive technology to learn art history, they become active learners who are in control of their learning process. As art becomes digital, the traditional hierarchy from instructor to learners becomes outdated (Julian, 1997). Our role as teachers has evolved from being storehouses of knowledge to facilitators of knowledge because information has increased so dramatically. In the past 30 years, we've obtained as much information as we had in the previous 5,000 years (Dunn, 1996). It is virtually impossible for anyone to know everything there is to know about even one narrow topic. Today, secondary school teachers cannot learn all their lesson plans in college and simply

recycle those plans every year. Instead, students must become empowered to take part in the seeking of information.

From passive observer to active participants, students change their roles as learners because this technology encourages a different view of teaching. Rather than the linear chronological order of the Essentialist platform mentioned above, Diane Gregory (1995) suggests an approach through Emancipatory Constructivism. In this view, for learning to take place, students must construct their own knowledge bases that are personal to them and acclimate all new knowledge into these bases. Integrated media frees the user to go through content at his or her own speed in a non-linear fashion.

Students are encouraged to be self-motivated because they are in control of the paths they take and links they decide to follow on the Internet. This ability to choose supports the child-centered approach and encourages active learning (Dunn, 1996). Instead of lesson plans being static forms in a notebook, teachers can use software programs to create online assignments or use available resources to create assignments with other web-sites (Mitchell, 1999; Spaulding, 1997). There are several resources on the web where teachers can post lessons or create their own web-sites for free (see Appendix B). For this study, students began their research by first visiting the on-line art classroom the researcher created for this study- the ARTmosphere at http://artmosphere.homepage.com. Students could then choose from a list of links that pertain to the content of the lesson. In this case, students could look for their artist's name in a list at an artist index web-site or search for information using a search engine. Students are more likely to develop a sense of autonomy because they have a role in the

process of learning and what web-sites they choose to go to rather than passively absorbing knowledge.

Summary of Literature Review and Statement of Hypothesis

Literature suggests that interactive media such as the Internet can enhance the learning experience for the art student. Learning is individualized to accommodate students' cognitive styles and provide alternatives for different interests. Students become active learners, and the teacher acts as a facilitator for the students' learning. The art room becomes a global environment where communication is fast, quick, and worldwide yet personal. In summary, the literature suggests that due to the magnitude of possibilities for interactive technology in the art classroom, art educators should consider the Internet as a helpful tool providing meaningful student-centered guidance in art criticism, aesthetics, art history, and production. By meeting students' individual needs and empowering them to become active learners, interactive technology makes learning more meaningful and pertinent to real-life experiences. Technology enhances communication and thus enhances expression. Art educators aim to plan instruction based upon art with the needs of the student in mind. By using interactive technology as a part of instruction, art education contributes to students' academic growth.

The hypotheses in this study were (1) that interactive media in a middle school art classroom will heighten students' motivation to complete an artist research project; (2) students using interactive technology will have control over their learning; (3) students' knowledge of art history will be broadened when they use interactive technology.

Chapter 3

Methods

Data was gathered from subjects using the Internet in an artist research project. The data indicates the effect that interactive technology has on a middle school art classroom. This chapter presents descriptions of the subjects, setting, treatment, and methods of data collection.

Subjects

The sample consists of eighteen eighth - grade students who had chosen art as their elective at North Garner Middle School. The school is located in a suburb of a major metropolitan area. The school serves a student population that is predominantly at a middle socioeconomic level.

Subjects were eighth-grade students who chose Painting/ Drawing as their 2nd semester elective course, which began on January 18, 2000. The art courses at the school for eighth graders include Painting/ Drawing and Pottery/ Sculpture that students can choose as their semester elective. A discipline-based approach to art education is used in both art courses that included art production, art history, aesthetics, and criticism. Other electives for eighth graders include Home Economics, Photography, Spanish, and Computer Science. This class was a sample of convenience. This particular class was chosen before the semester began because both the periods before and after 5th period are free for the teacher/ researcher. Fourth period is the teacher's lunch/ duty period and 6th period is the teacher's planning period. The researcher who undertook the investigation was the art teacher at this school.

The entire sample consisted of 11 boys and 7 girls. All students were between thirteen and fourteen- years old. Of the 18 participants, 1 was Latino, 1 Asian American, 6 white, and 10 African Americans. Eighteen of the 25 students in the Painting / Drawing class participated in the study. The remaining students did not participate in the Internet aspect of the project because they did not have Internet permission forms signed and were not included in the study. While some students in this school have Internet access at home and are very advanced, most students have never been on the Internet other than in the researcher's classroom. While some may have been allowed to use the Internet for recreational purposes, none had participated in an online lesson like this.

Setting in Which the Study Takes Place

The students in this study researched artists on the Internet in the school computer lab that is in the media center. There are 25 IBM compatible computers in the computer lab so those students had access to their own computer. All computers in the lab and in the entire school with exception to the media center (approximately 100 computers) share one server: an IMB- PC server 330 with 236 Kilobytes [KB] of memory and two 9 Gigbyte [Gig] hard-drives. There are two kinds of memory that are both important for quick Internet access: storage memory and processor memories. Processor Memory refers to how fast the application goes and varies at North Garner from 64 KB of Ram to 32 KB of Ram. Storage memory (hard-drive) varies from 4 Gig to 2 Gig respectively to their processor memory. The system runs on an ether-net backbone. Whereas many personal computers for teachers at home rely on modem speed to get quick access to the Internet, these computers run off Wide Area Network [WAN] TI-line. Nouvelle NetWare is the

management system for networking computers. The management system for machines (otherwise referred to as OS or operating system) is Windows 95 or Windows 98. The Internet Browser, which reads links and establishes communication with other networks, is Netscape Navigator. There is a protection system on all computers in the school, Fortress 4.0, used for network and workstation security in order to protect applications and maintain control over workstations. Because of this protection system, students can only access the icons on the desktop or shutdown the computer from the "start" menu (Johnston, 2000).

At the school setting in which the research is taking place, there are a variety of different skills within the teachers and staff. Ray Johnston (2000), the Curriculum Integration Coordinator at North Garner Middle School, told the researcher during an interview that he had personally observed how the teacher's attitude and comfort level with the technology directly affected whether or not they use the Internet at all. He said that at "our school, younger teachers who have recently been through college are more apt to using the Internet than others who were taught with more traditional methods." Yet, he also stressed the importance of using the Internet as a tool for teaching because not only is technology in every subject's curriculum but all students will have to take the computer skills competency test that is a North Carolina graduation requirement. He also observed that the teacher's attitude had a damaging effect on students' attitude and that

> The earlier those students start the Internet, the more their confidence and competence grows. The teachers who don't use the Internet as a tool in their instruction are depriving students of learning in a multiplicity of ways.

Students who do not have the opportunity to learn using interactive technology may become teachers who are still apprehensive about using it as well.

Measure

An attitude inventory using a Likert scale (see Appendix D) was constructed and pretested for the purpose of gathering data on the students' attitudes towards technology and art history both before and after the project. Notes were also taken on students' progress in class on the Internet through the teacher's journal. An unbiased observer was instructed in tallying students' time on task (see Appendix C) so that the researcher could perform her regular duties as teacher. The observer was an art education student who has observed in the past and was familiar with the study. A rubric (see Appendix E) was also developed to set criteria for the final products that students created. Five students from the sample were randomly selected for an interview (see Appendix F) that was videotaped for coding. Data from these interviews formed the basis for assessing student's attitude toward the interactive media. Videotaping the interview allowed for the recording of nonverbal behavior as well as preserving everything that was said.

Treatments

During the lesson, students participated in an online assignment, which used the Internet in an artist research project. Students were introduced to the "Artist in the Spotlight" research assignment on the first day of the project. Students were given a list of artists to choose from but they could also choose any other artist not on this list with approval from the teacher (see Appendix F). Students began Phase 1 by researching their artist and looking for biographical facts, images, and information about his or her artwork

so that they may begin their own interpretations. Students researched their artist using the Internet after having permission forms signed. The class reviewed Internet terms that they needed to know for researching their artist on the Internet (see handouts in Appendix E). Each student had his or her own assigned computer with Internet access. Students began by visiting the class web-site, the ARTmosphere at http://artmosphere.homepage.com, created by the art teacher for online assignments and exhibiting student artwork. From this site, they began entering their artists' names in a variety of search engines and exploring the web-sites that were found during their search. The art teacher, who was also the researcher, monitored student's progress by walking around the room answering occasional questions and taking notes about the students' behaviors. Students then used the information from the biographical data handout to write a PowerPoint presentation report on their artist and their artist's artwork that constituted Phase 2 of the project. The final phase was actually introducing that artist to the class through a PowerPoint presentation using a LCD projector in the art classroom. All student handouts can be found in Appendix B.

Calendar Table of Events in Carrying out Study

All permission forms and background data on the subjects were given to students by January 18, 2000 to be turned in by January 21, 2000. At this time, students completed the attitude inventory to record their thoughts on technology and art history before they began the project. On January 27, 2000, students were given the introduction to the research project, "Artist in the Spotlight," in which each student researched the life and work of an artist. The project contained three phases: (1) the search is on, (2) show

off your work, and (3) introduce your artist to the class. In creating the teaching unit, the teacher looked at a variety of teacher resources for examples but created her own lesson. See Appendix B for resources for art teachers who also wish to incorporate interactive technology in their instruction.

Students began research (Phase 1) in the library and computer lab on January 31, 2000 while the data collector recorded the progress and behaviors of the students. Students used the information gathered about the artist of their choice in a PowerPoint presentation that included a biography of the artist, a bibliography, and at least one image of the artist or his or her artwork (Phase 2). Phase 3 was to "Introduce your artist" to the class through a short 3-5 minute presentation. Students began the next phase at their own pace rather than on a certain date at the same time. Presentations were graded through peer evaluation on the last two days of the project, February 3-4. Each student gave every other student feedback based on the rubric (see Appendix F) established at the beginning of the project. Each student read comments from their classmates as well as from the teacher. At the end of the project, students were given questionnaires (see Appendix E) to reflect on their work and how the technology did or did not give them control of their learning. Five students were also selected at random for an in-depth interview with the data collector that was coded and interpreted. Each student in the study was given a number, and 5 numbers were chosen out of an envelope. Projects were also evaluated against the grading rubric that was given at the beginning of the project.

Data Collection

The data collection took place from January to February 2000 and involved all of the following field work data gathering strategies: student questionnaires, observations, examples of student work, videotapes of student interviews, student presentations, class discussion, and attitude inventories regarding art history and technology. During the pilot study done with students the previous semester, observations were made about the effect of using interactive technology to research artists and the nature of the methods for the actual study. Qualitative and quantitative methods were used to collect information about three major topics: students' access and previous experience with the Internet, students' attitude toward art history and technology, and the effect of using interactive technology upon students' motivation in an artist research project.

Pilot Study

A pilot study was conducted with eighth grade students in Pottery/ Sculpture elective course during the fall semester, 1999 at this school. The purpose of the pilot study was to determine the duration of the student research project and the effectiveness of the directions given by the art teacher and student handouts. Before the pilot study, the researcher had planned to use interactive technology with one group and use another group as a control group to only use traditional library resources like encyclopedias and books. It was found, however, that any research in the library involved the use of interactive technology including the card catalog. It was also found that the class web-site ARTmosphere (http://artmosphere.homepage.com) needed to be revised to provide

more resources and clearer directions for students. These revisions were made through the use of suggestions from students in the pilot study.

Student Questionnaire

A student questionnaire was developed to determine students' access to computers and their previous experience with the Internet (see Appendix E). The questionnaire consisted of six multiple-choice questions and was given before students were introduced to the project. The questions included:

1. Do you have a computer at home?
2. Do you have a computer able to "get on" the Internet at home?
3. Have you ever used the Internet?
4. Do you ever use the Internet at any other time other than school (home, public library,
   a friend's house, a relative's house, etc.)?
5. How often would you say that you use the Internet each week?
6. How would you rate your experience level using the Internet?

Student Survey- an Attitude Inventory towards Art History and Technology

A survey was created to determine students' attitude toward art history and technology (see Appendix D). This survey consisted of eight statements that students could respond to in terms of how much they agree or disagree. This was given before the artist research project and then again after the project. The survey questions were:

1. Art history is fun to learn.
2. You shouldn't have to study art history in art.
3. I look forward to studying artists from the past.
4. I look forward to studying artists living today.
5. I look forward to using the Internet in school.
6. Technology frustrates me.
7. The Internet lets me choose of what I study and learn.
8. I get bored trying to use the computer.

Field Notes

To ascertain the degree of active learning that was taking place during the lesson, a format was created for the data collector to take field notes while students were working (see Appendix C). This format was constructed so that the data collector could mark the number of times that certain behaviors were observed and whether or not those behaviors were related to the lesson. Notes were also taken beside each behavior from students' own comments overheard in class. The seven main behaviors observed were: asks question calling for factual information, asks question for clarification, gives opinion on issue, asks question of another student, responds to another student, observed reading information, and observed sleeping or daydreaming.

Student Interviews

In order to determine students' thoughts, feelings, and frustrations about using the Internet to study art, an interview was developed. Information from "Qualitative Research and Case Study Applications in Education" (Merriam, 1998) helped form the structure for these questions. Questions were based on students' control of the interactive technology in researching their chosen artist. Five students from the sample were randomly selected for the data collector to interview (see Appendix G for directions for interviewing). The data collector was chosen to interview students rather than the researcher, who is also their art teacher, because there was the possibility that students would not be as honest in giving their opinions to the art teacher about the project. The interviews were videotaped for the researcher to code at a later time. Data from these interviews formed the basis for assessing each student's attitude toward the interactive

media. Videotaping the interview allowed for the recording of nonverbal behavior as well as preserving everything that was said. A copy of the transcript of the interviews can be found in Appendix H.

There were basically three main questions although other questions may have arisen from the conversation. The first question was "What was the most important thing you learned in researching your artist?" The second question was "What was the biggest roadblock or difficulty researching this artist on the Internet?" The third question was "Would you be interested in more art history lessons that use the Internet?" The answers from the interviews with 5 students were coded into emergent categories by the researcher individually. The researcher then cross-checked their coding.

Student presentations and reports

The presentations and products by the students gave insight into each student's motivation in completing the artist research project. As noted earlier, the project consisted of three phases: searching, writing, and introducing that artist to the class. The actual student products provided evidence of the student's learning and how the Internet allowed for a wide range of interests and abilities. An interview conducted by the observer records students' perceptions of the project (see Appendices G, H, and I).

Chapter 4

Results

Five methods of data collection were used to obtain data. This chapter presents the results for each of these methods.

Student Questionnaires

The student questionnaire was used to determine the extent to which students have used the Internet before beginning this artist research project. As shown in Table 1, most of the students who participated had a computer at home.

Table 1- Do students have a computer at home?

Yes	15	83%
No	3	17%

The second question was related to Internet access. Just over 50% of the students had access to the Internet.

Table 2- Do students have Internet access at home?

Yes	10	55%
No	8	45%

The third question queried students in regard to their use of the Internet. All but one student had used the Internet.

Table 3- Have students ever used the Internet?

Yes	17	94%
No	1	6%

The fourth question asked students if they ever used the Internet at any other time other than school. Only two students said no.

Table 4- Do students use the Internet at any other times other than school?

Yes	16	89%
No	2	11%

When asked about the how often those students used the Internet, most students averaged about 2-5 hours each week.

Table 5- How often do students use the Internet?

None	3	17%
Less than an hour each week	3	17%
Between 2-5 hours each week	9	50%
More than 5 hours each week	3	17%

The sixth question inquired about students' level of experience. All but two students rated themselves as intermediate or advanced.

Table 6- How would students rate their experience level using the Internet?

Beginner 2	11.11%
Intermediate 8	44.44%
Advanced 8	44.44%

Student Surveys

Before and after the project, students were given a survey with eight statements to respond to (see Appendix D). The number of answers for each category were tallied and compared between pre-surveys and post-surveys. Due to absence, there are only 17 of the 19 responses from students. Each of the 17 students completed a pre-survey and post-survey. Directions were given that explained the choices but students were encouraged to give honest responses. After the project, more students agreed that art history is fun to fun that was the first statement.

Table 7- Student Responses to "Art history is fun to learn"

	Pre-Survey		Post-Survey	
Strongly Agree	1	5.88%	---	
Agree	3	17.65%	10	58.82%
No opinion	7	41.18%	6	35.29%
Disagree	5	29.42%	----	
Strongly Disagree	1	5.88%	1	5.88%

Fewer students agreed or strongly agreed with the second statement in Table 8 after the Internet project than before the project.

Table 8- Student Responses to "You shouldn't have to study art history in art."

	Pre-Survey	Post-Survey
Strongly Agree	1 5.88%	-----
Agree	4 23.53%	1 5.88%
No opinion	8 47.06%	11 64.71%
Disagree	4 23.53%	4 23.53%
Strongly Disagree	------	1 5.88%

For the third statement, there was a significant increase in the number of students who replied that they looked forward to studying artist from the past.

Table 9- Student Responses to "I look forward to studying artists from the past"

	Pre-Survey	Post-Survey
Strongly Agree	1 5.88%	3 17.65%
Agree	3 17.65%	5 29.41%
No opinion	8 47.06%	7 41.18%
Disagree	4 23.53%	2 11.76%
Strongly Disagree	1 5.88%	-----

As illustrated in Table 9, more students look forward to studying artists living today.

Table 10- Student Responses to "I look forward to studying artists living today."

	Pre-Survey	Post-Survey
Strongly Agree	1 5.88%	1 5.88%
Agree	7 41.18%	10 58.82%
No opinion	5 29.41%	4 23.53%
Disagree	4 23.53%	2 11.76%
Strongly Disagree	-----	-----

On the fifth statement, students looked forward to using the Internet approximately the same before the project as after the project.

Table 11- Student Responses to "I look forward to using the Internet in school."

	Pre-Survey	Post-Survey
Strongly Agree	7 41.18%	8 47.06%
Agree	9 52.94%	6 35.29%
No opinion	1 5.88%	2 11.76%
Disagree	-----	1 5.88%
Strongly Disagree	-----	-----

The sixth question asked students if technology was frustrating. No students agreed or strongly agreed with this statement on the post-survey.

Table 12- Student Responses to "Technology frustrates me."

	Pre-Survey	Post-Survey
Strongly Agree	2 11.76%	-----
Agree	3 17.65%	-----
No opinion	2 11.76%	6 35.29%
Disagree	4 23.53%	4 23.53%
Strongly Disagree	6 35.29%	7 41.18%

On the seventh statement, there were no students on the pre-survey or post survey that disagreed or strongly disagreed with the statement "the Internet lets me choose what I study and learn."

Table 13- Student Responses to "The Internet lets me choose what I study and learn."

	Pre-Survey	Post-Survey
Strongly Agree	4 23.53%	7 41.18%
Agree	8 47.06%	5 29.41%
No opinion	5 29.41%	5 29.41%
Disagree	-----	-----
Strongly Disagree	-----	-----

Over half of students disagreed with the eighth statement "I get bored trying to use the computer." Clearly, most of the students in this study do not feel bored using the computer.

Table 14- Student Responses to " I get bored trying to use the computer."

	Pre-Survey	Post-Survey
Strongly Agree	1 5.88%	-----
Agree	2 11.76%	1 5.88%
No opinion	1 5.88%	2 11.76%
Disagree	6 35.29%	3 17.65%
Strongly Disagree	7 41.18%	11 64.71%

Field Notes

The data collector, an art education undergraduate at a local college, was a major part of the research process through conducting the interviews and taking field notes while the students were working. She made these observations in her notes:

> I think the use of the Internet versus doing research through the library is absolutely more appealing to the student. I noticed the Internet held the interest of all of the students involved. The nature of the internet with its interactive buttons, user friendly links and eye catching graphics lures the students in and then guides them through an adventurous search of their subject. Even with the "down time" the computer takes to search the computer provides a quick visual reward that further stimulates the student to search for more. Again the search involves an interaction of the student with the computer, the click of the mouse, viewing the screen, going through buttons and links on the computer. Compared to the traditional library search, I think the Internet is much more appealing and less boring. All of the students I observed were very focused on their lesson when using the computer. No student ever made any negative comments about the [research] project.
> (Wiggins, 2000)

In addition to the field notes from the data collector, the researcher, who was also the art teacher for these students, made several observations of the students while working. All the computers in the lab share a server with all of the other computers in the entire school that makes for a very long wait time for downloading pages from the Internet. Both the data collector and the researcher noted that when students were waiting for pages to download, they would do a variety of things to make use of that time without being prompted by the teacher. Some students would write in their notebook or sketch something they had just viewed. Many students would look at other students' monitors to see what they were doing sometimes helping them find information. As soon as a student would try to visit a web-site not related to the lesson, another student would see it and either announce to the class or whisper that "Mrs. Harrell's going to get you" which got everyone's attention.

In her field notes, the data collector also noted the amount of communication between teacher and student compared to communication between students (see Table 1). Because of the seating order, students were able to ask other students nearby if they had a question rather than the teacher. This also eliminated any time that they would have to wait until the teacher finished helping one student before coming over to help another student. This communication between students was almost always related to the lesson and usually in a voice that did not distract other students while they were working. Some of the most frequently asked questions asked by students to other students were "Where did you find that?" and "What are you doing?"

During the field notes, the data collector marked frequencies and cited students' comments for first two days in the computer lab- Phase 1- for the 7 types of observations listed in the Fieldwork notes for Observers (see Appendix C).

Table 15- Frequencies of observed behaviors while researching on the Internet

Behaviors Observed	**Related to lesson**		**Not related to lesson**	
1. Asks questions for factual information	23	90%	7	10%
2. Asks questions for clarification	15	88%	2	12%
3. Gives opinion on issue	9	75%	5	25%
4. Asks questions of another student	26	83%	5	17%
5. Responds to another student	29	85%	5	15%
6. Observed reading information	33	82%	7	18%
7. Observed sleeping or daydreaming	0	---	0	---

Student Interviews

When students were asked what was the most important thing that they learned in the artist research project, four out of five students responded that it was fun. Four out of five students made initial responses involving knowledge. The names of the students have been fabricated to protect their identity. Renita commented that "the most important was that I had never learned about her [Elizabeth Catlett] before this project. I now know about her."

During the conversation, four of the five students made comparisons between using interactive technology to study art and using traditional resources without being

prompted to compare the two. Nicky commented that the Internet was "better than books." Jay also made the comparison in saying the following:

> **Interviewer:** Well, the last question is would you be interested in more art history lessons using the Internet in other projects?
>
> **Jay:** Hmmm. It would be interesting. It would be a lot more than, ah, you could usually find in a like dusty book than was like twenty years old.
>
> **Interviewer:** You think you could probably find more?
>
> **Jay:** Yeah, you could probably find more about say Thomas Jefferson now than you could find in a twenty-year-old book. They keep finding more out about him.
>
> **Interviewer:** So, you're saying it's more updated.
>
> **Jay:** Yeah, More up to date. Constantly.
>
> **Interviewer:** Any other reason why you choose that, or anything else about the Internet?
>
> **Jay:** Oh, then you've got the multi-media that you can't really find in a book. And the stuff, like the multi-media in the... ah, CD-ROM encyclopedias. You can't really work with them. You can watch them, fine. But you can't really save it. You can save the pictures but that's about it. You can't... Like, um, for my project, the reason it's so big is I put in a video clip from one of those Animation things. So, you can find it on the Internet but you just can't get that from like a book.

This dialogue confirms what was suggested in the student questionnaires and in the ARTmosphere site meter. The students who used the Internet in their spare time feel comfortable with multimedia communication. They also seem to feel connected to the ARTmosphere. One student indicated that he goes to the ARTmosphere in his spare time. This comment suggests that there is a merging together of school, home, and worldwide resources. In the transcripts of student interviews (see Appendix H), students

also expressed that they felt control of the media- "you get to do things yourself" and "I learned how to get pictures off the net and put them into my PowerPoint presentation."

Chapter 5

Analysis

The following chapter analyzes the results of the various methods in terms of the students' motivation in completing an artist research project. Other important aspects of student-centered instruction were considered in the analysis such as active learning and individualized instruction. As stated earlier, several qualitative and quantitative methods were used to collect information about three major topics: student's access and previous experience with the Internet, students' attitude toward art history and technology, and the effect of using interactive technology upon students' motivation in an artist research project.

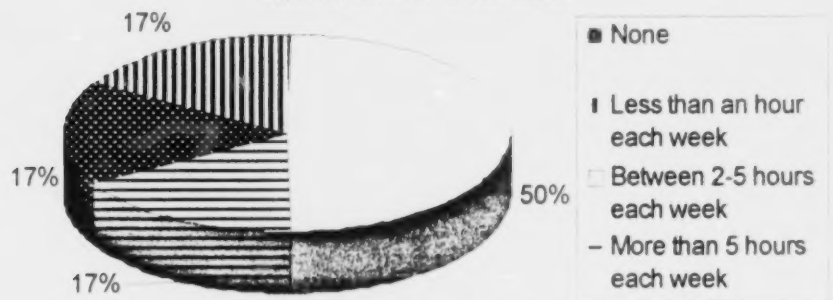
Pilot Study

One of the most surprising findings occurred early in the project during the pilot study. It was found that a comparison study could not be conducted between students using interactive technology to research artists and students using traditional resources in a library to research. School library settings have already moved towards using technology for card catalogs, encyclopedias, and other traditional books and filing systems. This finding led to a more qualitative study of student learning focusing on students while they used interactive technology in an artist research project.

Student Questionnaires: Access and Previous Experience with the Internet

Judging from the results of the questionnaire, most students in this particular class are very familiar with the Internet and consider themselves either on an intermediate level or an advanced level. Most of these students spend several hours on the Internet each week at home or at a friend's house. The fact that such a large percentage (84%) spend at least an hour or more on the Internet each week (see Figure 1) outside of class

Figure 1. Average Time Students Spend on the Internet Each Week Prior to Research



shows that students are interested in using the Internet for their own recreational enjoyment. None of these students had ever used the Internet at school other than art classes that they might have taken before this semester. The questionnaire shows that most students had a broader range of materials at home through the Internet than they had at school.

Because only 1 student out of the 18 questioned had never used the Internet, there was little instruction needed on how to use the Internet. Students knew how to do searches using search engines and follow links even though none had done it in another teacher's classroom. While students were waiting for pages to download, they would

look around to see what other students were doing. Thus, students helped each other without taking away from their own Internet search.

The questionnaires also show that because students were able to use the Internet at home, they could actually access the class web page (the ARTmosphere at http://artmosphere.homepage.com) and reread the assignment or show their parents what they were doing in class. The large number of hits recorded these visits each night during the week of the project and by the entries that students signed in the Guestbook. Table 1 illustrates the number of visits to the class web-site (the ARTmosphere) at http://artmosphere.homepage.com each hour for each day of the week. Table 2 illustrates the number of page views through the entire web-site for each hour of each day. Judging from the frequency of hits, more students visited the ARTmosphere class web-site during the morning hours that they were in class than any other time. However, there were several hits in the evening hours. Several students commented that they had worked at home until they reached a roadblock that we would address at the beginning of class the next day. Site Meter at http://sitemeter.com/ gave the statistics about the visits and page views to the web-site in exchange for providing a hyper-link to their site through a small icon on the first page of the ARTmosphere.

Whereas the data from the numbers of visits and page views to the ARTmosphere class web-site does reveal a lot of activity, it does not give information about the amount of time that students spent following links from the site or going directly to those sites. Once students learned to access certain web-sites about their artist, they would go straight to those sites. Because many students had computers at home, they also would use other

to those sites. Because many students had computers at home, they also would use other interactive media such as Encyclopedia Britannica to research their artist.

Table 1- Visits to the Artmosphere during the week of the research project

Hour	Day 2/14	2/15	2/16	2/17	2/18	2/19	2/20	Total
1	0	0	0	0	0	0	0	0
2	0	1	0	0	0	1	0	2
3	1	0	0	0	0	0	0	1
4	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0
6	1	1	0	0	0	0	0	2
7	1	0	0	0	1	1	1	4
8	3	3	2	2	2	1	0	13
9	1	1	1	0	3	0	1	7
10	1	2	1	3	1	1	1	10
11	0	4	1	0	0	1	1	7
12	2	2	3	4	3	0	2	16
13	0	2	0	3	2	0	1	8
14	0	1	1	2	2	3	1	10
15	2	2	0	2	4	0	1	11
16	3	0	1	0	2	2	1	9
17	0	1	2	0	1	3	1	8
18	0	1	1	4	1	0	1	8
19	1	2	3	0	1	0	1	8
20	3	2	1	0	0	1	6	13
21	3	3	0	0	1	0	1	8
22	1	1	0	0	0	1	0	3
23	0	1	0	0	1	2	2	6
24	0	3	0	0	0	0	0	3
Total	***23***	***33***	***17***	***20***	***25***	***17***	***22***	***157***

Table 2- Page Views of the ARTmosphere during the week of the research project

Hour	Day 2/14	2/15	2/16	2/17	2/18	2/19	2/20	Total
1	0	0	0	0	0	0	0	0
2	0	1	0	0	0	1	0	2
3	1	0	0	0	0	0	0	1
4	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0
6	2	1	0	0	0	0	0	3
7	1	0	0	0	1	1	1	4
8	20	17	11	14	7	3	0	72
9	25	12	3	5	8	0	1	54
10	3	5	2	3	1	2	1	17
11	0	6	1	0	0	3	1	11
12	16	12	9	4	4	0	2	47
13	2	4	0	4	4	0	2	16
14	0	2	1	2	3	5	1	14
15	2	4	0	2	4	2	1	5
16	3	0	1	0	4	2	1	11
17	0	1	2	0	1	4	2	9
18	0	2	1	6	1	0	1	11
19	3	5	5	0	1	0	1	15
20	6	2	1	0	0	1	7	17
21	4	4	0	0	2	0	2	12
22	3	1	0	0	0	1	0	5
23	0	1	0	0	3	3	2	9
24	0	3	0	0	0	0	0	0
Total	***91***	***83***	***37***	***40***	***44***	***28***	***25***	***348***

Student Survey: Students' attitude toward art history and technology

The student surveys give insight into students' attitude toward art history and interactive technology both before the project and after the project. While it is believed

that one student inaccurately marked his answers by answering "strongly agree" on every statement in the post survey, these surveys represent students' feelings and opinions about their learning.

For the first question, "Art History is fun to learn," (see Table 7) there was a significant increase (41.17%) in the number of students who agreed with this statement. Surprisingly, the student who strongly disagreed with the statement showed enthusiasm for doing more art lessons like this on the Internet. When this student was later asked about his statement, he reconfirmed his answer saying that "art history is boring." But, he didn't think of living artists as art history. This seemed to be the case with many students in the study. Students have a pre-conceived idea that art history is out of a book or a lecture with slides in a dark and sterile art room. Discovering current events and living artists was exciting to students and did not fit their stereotype of what art history is.

Discussion with students also reveals that the second question's reference to art history is based on students' pre-conceived idea of art history, which does not include living artists. Although the number of students who agreed or strongly agreed with this statement decreased by 23.53%, there was a significant number of students (64.71%) who had no opinion on this statement after the project was completed (see Table 8). Again, this contradicted students' requests to do more online assignments using art museum web-sites. It appears to be the pre-conceived idea of art history instruction (from books and slides) that students are not fond of and not the use of the art related web-sites in an art classroom.

When students were asked if they agree with the statement "I look forward to studying artists from the past," there was an increase (23.53%) in the number of students who agreed or strongly agreed with this statement from the pre-survey to the post survey. There was also an increase (17.64%) in the number of students who agreed or strongly agreed that "I look forward to studying artists living today." It is also interesting to note that only 47.06% looked forward to studying artists of the past while 64.7% looked forward to studying artists living today on both post-surveys. Without the use of the Internet as a research tool, students would not have been able to research most any living artists using the books in the school's media center.

The last few statements on the student survey concerned students' feelings toward interactive technology and computers. These responses revealed some of the students' frustrations using the slow and outdated computer equipment at school in preference to the equipment they had at home. The number of students who agreed or strongly agreed with the fifth statement "I look forward to using the Internet in school," decreased from 94.12% on the pre-survey to 82.35% on the post survey (see Table 11).

The number of students who agreed or strongly agreed with the sixth statement "Technology frustrates me" dropped from 23.41% to 0% from the pre-survey to the post-survey. Overall, students learned to manipulate technology more efficiently and with a greater degree of confidence even though the computers were slow. Students also enjoyed showing teachers and administrators who would occasionally drop by the art room or computer lab their PowerPoint presentation because the adults would often respond in admiration and ask the student "How did you do that?" Students get an

enormous boost of self-esteem in showing other students and adults how to use this technology.

Students' responses to the seventh statement on the pre-survey "The Internet lets me choose what I study and learn," support the hypothesis of the study. No students on the pre-survey or post survey disagreed or strongly disagreed with this statement. While this project had set standards and guidelines, students felt that the Internet gave them freedom to choose what they decided to learn about this person and their work. Many students did not choose the artist they wanted to study until they had explored several of the artists' web-sites on the lists provided by the teacher on the on-line assignment page on the ARTmosphere (http://artmosphere.homepage.com/pages/spotlight.html). Several students discovered other artists not on the original list that they were more interested in researching than the artist they had originally chosen. Even students researching the same artists found wide range of variety in researching that one person. For instance, two boys researched Andy Warhol without knowing that the other student was researching him. One student became engrossed in showing as many images of Andy Warhol's artworks as possible such as the famous Marilyn Monroe, Jackie Kennedy, and Elvis Presley images. The other student was very interested in the artists' personal life and social circle at the Factory and Studio 51 in New York City.

On the eighth statement on the pre-survey "I get bored trying to use the computer," most of the students (81.75%) disagreed or strongly disagreed with this statement. If the statement had been reworded to say computers in the computer lab, some students may have answered differently. Through discussion at the end of the

project, students revealed that because computers were slow, it was sometimes boring waiting for pages to download. During this time, students made use of the time by writing in their notebook or helping other students.

The Effect of Using Interactive Technology upon Student Motivation

Students' motivation was revealed through their time on task in the field notes, their responses in the interviews, and their PowerPoint presentations. E-mails and Guestbook entries in the class web-site ARTmosphere provided another form of evidence. Two students e-mailed the artists whom they were researching that were still alive. This added correspondence sparked an interest that was evident in their attention spans the next day. The following e-mail message from contemporary artist, Andii Adamick (2000) and one of the students in the study reveals a common interest between the student and artist.

> Student: What made you paint motorcycles?
>
> **Adamick: I am a motorcyclist and I have a talent for painting. So why not combine the two?**
>
> Student: When you were growing up who was your role model?
>
> **Adamick: OOOH! A tough one. I've been impressed by a lot of different people. I don't think I had any one role model. People who do what they love and don't worry about what others think impress me.**
>
> Student: What is you favorite type of bike?
>
> **Adamick: I like all bikes but my favorite style of bike are sportbikes. Italian mainly. Moto Guzzi, Laverda,**

E-mail communication between students and artists, students and students, and students and teacher has motivated students and given them a sense of power and knowledge that

might not have been possible without the Internet. Three students e-mailed the researcher at home to ask questions about the project and to tell the researcher about art web-sites that they found on the Internet.

Chapter 6

Discussion and Issues of Concern

Based on the information collected by the questionnaire, most students are Internet literate and use the Internet often. The implication of this finding is that teachers in school must find ways to keep up with this demonstrated student interest and skill.

Attitude and Skills of the Art Teacher

Before and during this study, certain issues were considered about the effectiveness of interactive technology in the art classroom: the attitude and skill of the art teacher, access to on-line computers, using Internet instruction effectively, and copyright and legal issues. Although Internet technology can provide a large amount of information, it requires a time investment and a desire to learn before teachers can be on-line and use it to their advantage. One serious concern for art teachers using computers in their art rooms is their lack of knowledge and understanding of the technology (D'Angelo, 1988).

As demonstrated by data in this study, students know how to use the web and like to use it. Teachers who are not prepared to use the web are not able to maximize student learning through technology. In West Virginia, researchers studied contributing factors to implementing technology in the classroom. Rather than the kind of training they received, it was the positive or negative attitude of the teacher that made a significant difference (Grandgenett and Heise, 1996). The researcher in this study was fortunate to have taken several workshops and classes using technology and creating web-sites using

html code. There are usually several workshops offered through the school or county each year that focus on different ways to integrate technology into the classroom

Much research has been done about staff development in training teachers to use interactive technology effectively. While adult learners differ from middle school students dramatically, there are several parallels about the way that both learn. D'Angelo (1988) discusses "computers for art teachers" and the effects of the interactive instruction upon the learner. Advantages of this kind of instruction included collaboration, shared knowledge, communication between schools, and communication between students and groups that are geographically apart. Disadvantages included difficulties with various levels of experience, time involved in making users become comfortable with technology, and technical difficulties. It was also noted that interactive technologies could never replicate face to face interaction.

Access to On-line Computers

While many art teachers are willing to incorporate technology into their teaching, art rooms are usually the last place in the school to receive computers. Because computers are a major financial investment, many supervisors overlook the arts when implementing technology because they cannot see how it is relevant to learning its content or believe that computers should only go to "core" subject areas such as Language Arts and Math. In some circumstances, art teachers have had to make budget choices between more art materials, a kiln, or some other equipment and an out-of-date computer that lacks a modem and the potential to be on the Internet. With these choices,

the teacher understandably did not choose the computer, and the supervisor continues to think that the art room is not the place for technology.

Contrary to the belief that computers should only be used for core area, student surveys show that students are introduced to a broad range of academic content when doing art history research. One child learned that his topic was written about in Spanish, Dutch, German, and Italian as well as English and used the Internet to translate that information. It is very unlikely that a student would encounter materials in different languages in a traditional classroom. Student interest runs high because of the multi-media of Internet research. Two students imported video clips of animated movies created by the artist they were researching into their PowerPoint presentation.

Many schools have a computer lab, like the one used in this study, that teachers may sign up for but art teachers are not always allowed to sign up for bringing classes. Some schools only allow "core" subject teachers, such as Language Arts, to use this computer lab. This is clearly not utilizing the full extent of learning possibilities that a computer lab can offer. Bigham's (2000) 12 Keys for Success emphasized that all teachers, students, and administrators should have the same opportunities to use the school's technology.

Recent research has given insight into the extent of Internet access in United States' public schools. While the national average for classrooms with Internet access is 63%, less affluent schools (where 71% or more were eligible for free or reduced price school lunches) only 39% of their classrooms were "wired" to the Internet. Also, the ratio of computers per student is 1:7 at the wealthiest schools and 1:16 at the poorest

schools (Williams, 2000). This lack of funding for instructional technology would prohibit many students from ever having the opportunity to use the Internet because they do not have access at home. President Clinton (2000), who referred to this as the Digital Divide, described this racial and ethnic disparity in access to interactive technology such as the Internet. Clinton's vision is that everybody should have access to a computer with access to the Internet, and they should know how to use the technology and make the most use of it.

If a teacher is fortunate enough to purchase computers for his or her art room, he or she should do some research on what is the most current technology available for the money they are able to spend. Quick access to the Internet will depend upon the computer's modem speed, memory, and processor speed (Koos & Smith-Shank, 1996). Because art teachers will want to use the Internet to retrieve images, the speed of the modem, processor speed, and Central Processing Unit clock speed (MHz) should definitely be considered (Johnston, 2000). If the modem's speed is 32K or less, it will take unnecessary time to download web pages. Often, school systems purchase used computers at a discount from universities or businesses. These computers may get you "on-line" but will create long periods of waiting while images are downloaded. This is valuable learning time for the student that is wasted thus causing their interest to decrease.

Using Internet Instruction Effectively

The teacher plays a vital role in learning on the Internet. In this study, the teacher provided a complete online research project on the Internet with resources to facilitate

student learning. While there are vast amounts of information on the Internet, the ordering of this information can be very unorganized and the student can easily get "lost." The Web is a tool that needs to be used correctly in order to provide effective instruction (Wongse-Sanit, 1997). By structuring the assignment, the teacher leads the student to feel confident in the choices he or she makes. For example, in Jay's selection of an artist to research, he chose a living Japanese animator. Because of the structure of this assignment, he could choose celebrated artists of the past as well as living artists. He was confident in his choices and his abilities to conduct research. The teacher doesn't necessarily have to know everything about how the technology works to begin using the Internet in teaching art. Through this study and the pilot study, many teaching strategies and methods were piloted. The most effective methods were opening a new window when students were following links so that students can close the new window at any time and return to their assignment page.

Teachers must also evaluate web-sites for accuracy and currency and instruct students how to evaluate (http://www.ala.org/ICONN/partners4.html 1999). Because basically anyone can now create a web-site, much of the information on the Internet is often biased or inaccurate. Students in this research project often found conflicting dates of birth and other information from different web-sites. Students should look for information on the author of the web-site as well as their qualifications for being knowledgeable on the subject matter. By approving some web-sites and their links and creating bookmarks, favorites, or shortcuts, teachers can help reduce this risk.

because of the danger of legal infringements. This is a complex issue that is still under debate and should be watched closely for any change. Right now, "fair use laws" offer the use of its images for educational purposes but may not be used to make any kind of profit. It is appropriate when using images taken from the Internet to give credit where they were found. The appendix gives a list of web-sites that are very current in copyright law information and can provide information if someone has a question about a particular situation.

In Wake County where this study takes place, all students and staff must have a signed Internet and E-mail Agreements. They need permission for using the Internet, being photographed for the Internet, and having their work displayed on the Internet. Failure to follow guidelines in the Wake County Internet and E-mail Agreement will result in the offending student or teacher being barred from using the Internet. Precautions are also taken that students are not able to visit any questionable sites by using a proxy server. A proxy server is software that screens out web-sites based on the content. For example, the Wake County server screens most sites that contain chat rooms and pornography. The disadvantage to this kind of censorship is that the proxy server misclassifies some web-sites as questionable when they are not. One of the students in the pilot study could not visit a biography page on Elizabeth Catlett by the Black Panthers because the proxy server screened it.

One of the most significant findings of this study is the material gathered by the field notes (see Table 1). For all learning behaviors, students were engaged in the assigned lesson. Behaviors not related to the lesson were infrequently observed. The data

collected noted that "the children were stimulated by the visual learning provided by the Internet." The data collector noted that "the children were very focused on their lessons when using the computer." (Wiggins, 2000)

Chapter 7

Summary and Conclusion

This research was undertaken to investigate the effect of interactive technology on a middle school art classroom during an artist research project. The investigation began with a review of literature and related research to identify general writing related to historical background of interactive technology, interactive technology's effect on student-centered instruction, and the possibilities for this technology in a middle school art classroom. Grounded in this information, a teaching unit based on an artist research project was created called "The Artist in the Spotlight." A class web-site, the ARTmosphere at http://artmosphere.homepage.com, was created to provide students with directions for the project and resources for researching artists on the Internet. Students completed an attitude inventory to record their thoughts on technology and art history before beginning the project. Questionnaires were administered to determine students' access to computers and their previous experience with the Internet. The project contained three phases: (1) the search is on, (2) show off your work, and (3) introduce your artist to the class. Students were also selected at random for an in-depth interview with the data collector. The students' dialogue was coded and interpreted. Projects were also evaluated against the grading rubric that was given at the beginning of the project.

This inquiry was concerned with using interactive technology as a tool for a student-centered approach to instruction in art history and criticism. Information collected from the subjects in this study, including surveys, questionnaires, interviews,

field notes, and student products, provided insight into how they viewed their learning. Based on these findings, the following conclusions have been reached:

1. The Internet can be an effective tool in motivating middle school students to learn about art.
2. The Internet provides a student-centered approach where students feel in control of their learning and suit their learning to fit their needs and interests in an electronic environment.
3. Students are motivated in learning about art and make personal and meaningful connections with living artists and artists from the past when they use interactive technology. These connections might not have been possible without the use of the technology.

More research is needed into the effects of using the Internet in an art classroom. Further research could explore effective strategies for using the Internet as tool for instruction. The possibilities of this new medium are just beginning to be discovered.

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Appendix A:

Permission to Participate

Informed Consent Statement

From: Michelle H. Harrell, Art Teacher (Researcher)
North Garner Middle School, Garner, NC
To: Parent/ Guardian of students enrolled in an art class
Date: February 4, 2000
Subject: PERMISSION TO PARTICIPATE

As some of you may already know, I am doing graduate work at East Carolina University. This semester, I'm doing a study with my 8th grade art students that is part of my thesis research. The purpose of this study is to investigate the effect of interactive technology (including the Internet) upon student-centered instruction in my art classroom. Data for the study will be collected from surveys taken by the students.

Your student's participation in this study is voluntary.

The results of this study will benefit art educators, curriculum planners, and other researchers interested in improving student motivation and encouraging them to become active learners. If you would like a copy of the manuscript, please provide Mrs. Harrell with your mailing address and a copy will be sent to you upon its completion at the end of the school year.

_____ _____ Student's Name

_____ Parent's Name

_____ Parent's Signature

_____ Date

Appendix B:

Resources for Art Educators Using Interactive Technology for Instruction

Resources for Art Educators Using Interactive Technology

Reference guides for teachers

The following three manuals are suggested resources for art educators who wish to use interactive technology in the art classroom. Some of the following were used in creating the unit used in this study and others have been used to create other online assignments.

Mitchell, K. (1999). ***Teachers on the Internet: Using it in the classroom.*** **Michigan: Instructional Fair Publishing Group.**

Spaulding, S. (1997). ***Internet for kids.*** **CA: Teacher Created Materials, Inc.**

Bryant, M. H. (1996) ***Integrating Technology into the Curriculum: Intermediate Level.*** **CA: Teacher Created Materials, Inc.**

While the following resource seems more geared towards the elementary classroom teacher, there is some helpful tips and examples of lessons that can help art educators plan their own lessons. It offers very helpful tips on scheduling, planning, management, and assessment for Internet technology whether in the classroom or the computer lab.

Thorsen, B. (1998) ***Integrating Technology into the Curriculum: Challenging Level.*** **CA: Teacher Created Materials, Inc.**

Listed below are some of the web tutorials that teachers can use to become familiar with using the Internet, incorporating it into their classrooms, and creating online assignments.

Microsoft http://www.microsoft.com/publisher/
Web Tools Review http://photo.net/wtr/
Free Webmaster Resources http://www.webmaster-resources.com/
Art Electronic Media http://home.earthlink.net/~ahmorrison/steps.html
Andy Carvin's Edweb http://edweb.gsn.org/
Teach Online http://eleaston.com/teach_online.html

Key-pal Resources:
Teacher Contact Database http://www.classroom.net/teachercontact/
Intercultural E-mail Classroom Connections http://www.stolaf.edu/network/iecc/
Liszt: Social/ Kids http://www.liszt.com/select/Social/Kids/
E pals.com- Global Classroom Exchange http://www.epals.com/
Key Pals http://www.angelfire.com/ky/keypales3/
Intercultural E-mail Classroom Connection http://www.iecc.org
Computer Pals http://reach.ucf.edu/~cpaw/

Free Electronic Mail Accounts
Hotmail http://www.hotmail.com
Yahoo http://www.yahoo.com
Juno http://www.juno.com
Telebotxoom http://www.telebot.net
Prontomail http://www.prontomail.com
Apexmail http://www.apexmail.com
Mail Excite http://www.mailexcite.com

Image Search Engines
IBM's Query by Image Content http://wwwqbic.almaden.ibm.com/~qbic/
Scour Net http://www.scour.net
Webseek http://www.ctr.columbia.edu/webseek/
Ditto.com http://www.ditto.com/

Other Search Engines and Resources for Student Research
Yahoo Arts http://dir.yahoo.com/arts/
Art Seek http://www.artseek.com/index.html
Art in Context Center for Communications
http://www.artincontext.com/listings/artist/alpha/menu.htm
World Wide Arts Resource http://wwar.world-arts-resources.com/artists1.html
University of Toronto Index of Artists
http://citd.scar.utoronto.ca/VPAA61/ArtistIndex.html

Electronic Magazines
Artbyte http://www.artbyteonline.com
Hotwire http://www.livewired.com
Art Daily http://www.artdaily.com/

Copyright Issues:
US Copyright Office Homepage http://lcweb.loc.gov/copyright/
Copyright Website http://www.benedict.com
Art Museum Image Consortium http://www.amico.net
Copyright and Fair Use: The Great Image Debate
http://oregon.uoregon.edu/~csundt/vrcfu.htm

Listserv and Newsgroups for Art Educators

The Getty's ArtsEdNet Talk http://artsednet.getty.edu/ArtEdNet/Connection/
The Kennedy Center's ArtsEdge http://artsedge.kennedy-center.org/forum/listserv/

Appendix C:

Fieldwork Notes for the Data Collector

Fieldwork notes for Observer

Date_____

Type of Observation		Frequency
1. Asks question calling for factual information	Related to lesson	
	Not related to lesson	
Notes		
2. Asks question for clarification	Related to lesson	
	Not related to lesson	
Notes		
3. Gives opinion on issue	Related to lesson	
	Not related to lesson	
Notes		
4. Asks question of another student	Related to lesson	
	Not related to lesson	
Notes		
5. Responds to another student	Related to lesson	
	Not related to lesson	
Notes		
6. Observed reading information	Related to lesson	
	Not related to lesson	
Notes		
7. Observed sleeping or daydreaming	Related to lesson	
	Not related to lesson	
Notes		

Appendix D:

Student Survey-

Attitude Inventory towards Art History and Interactive Technology

Name_____ Date _____

Student Survey

Read each statement below and respond based on the way that you feel and what you believe. Think about how strongly you agree or disagree to the statement and choose the letters that reflect your belief. Circle one choice for each answer.

SA= You strongly agree
A= You agree
N= No opinion, You're undecided about whether you agree or disagree
D= You disagree
SD=You strongly disagree

	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
1. Art history is fun to learn	SA	A	N	D	SD
2. You shouldn't have to study art history in art.	SA	A	N	D	SD
3. I look forward to studying artists from the past.	SA	A	N	D	SD
4. I look forward to studying artists living today.	SA	A	N	D	SD
5. I look forward to using the Internet in school.	SA	A	N	D	SD
6. Technology frustrates me.	SA	A	N	D	SD
7. The Internet lets me choose of what I study and learn.	SA	A	N	D	SD
8. I get bored trying to use the computer.	SA	A	N	D	SD

Appendix E:

Student Questionnaire

Name_____ Date _____

Student Questionnaire

Read each question below and respond based on your personal experience using computers and the Internet. Circle one choice for each answer.

Do you have a computer at home?

A. Yes B. No

Do you have a computer able to "get on" the Internet at home?

A. Yes B. No

Have you ever used the Internet?

A. Yes B. No

Do you ever use the Internet at any other time other than school (home, public library, a friend's house, a relative's house, etc.)?

A. Yes B. No

How often would you say that you use the Internet each week?

A. None

B. Less than an hour each week

C. 2-5 hours each week

D. More than 5 hours each week

How would you rate your experience level using the Internet?

A. Beginner

B. Intermediate- somewhere between a beginner and advanced

C. Advanced

Appendix F:

Student Handouts

Artist in the Spotlight Research Project
Painting and Drawing- Spring 2000

Goal 5: The student will understand the visual arts through studying one artist's life and artwork and introducing that artist to the class.

In your next project, you will research an artist, write a report, and introduce that artist to the class. Your report will contain information about that artist, pictures of that artist's artwork, and your bibliography. You may choose a partner or work by yourself if you prefer. If you have a partner, you and your partner's paper will need to be twice as long as if you work by yourself. You will be allowed some time in class to do your research but may have to do some of it outside of class as well. The final report will take 2 weeks to complete and counts as a test grade!

By _____: Choose your partner (unless you rather work alone) and the artist you will research. Get Internet permission form signed.

Begin Phase 1- The search!

By _____: Turn in your "Biography of an Artist" handout. Also, have a handwritten bibliography of the books and web-sites you used to find that information. You should have at least 3-4 sources for your report.

Begin Phase 2- Show off your work!

By _____: Have 2 pictures that you have saved on a disk in the library off of the computer or have scanned from a book. One picture can be an artwork by that artist and the other may be an artwork or a picture of the artist (if you can find one).

By _____: Turn in your rough draft essay on your artist's life. You can include information about where they were born and the culture that they lived in. Identify what medium that artist worked in most of the time (oil painting, sculpture, what?). Explain the characteristics that made that artist unique as well as what you thought was the most interesting about that artist. (Be sure not to copy from the book- word by word. Put it in your own words.) Also, include what resources (your bibliography) that you used to find your research at the bottom of your paper or on another page.

By _____: Present your research in class (3-5 minutes) which is ***Phase 3- Introduce your artist.***

Resources available to use:

In class- Inspiration station (magazines, calendars), Discovery zone (books), your art textbooks, any handouts I give you in class

Library- encyclopedias, card catalog, computer. ***Internet*** (if you have a signed permission form) or Encyclopedia Britannica

Your Ideas:

Artist in the Spotlight (Continued)

From the list below, choose one artist to research. If you know of another artist who did two-dimensional work you can use him/her with my permission. Try to choose an artist that you think you will be interested in or ask me for suggestions for other artists The artists in **bold** will have more information on them in our library than the others.

Adams, Ansel- American nature photographer- did Yellowstone National Park
Audubon, John James- documented/illustrated nature (particularly birds)
Bearden, Romare- African American artist from NC/ Jazz inspired collages
Cassatt, Mary- American Female Impressionist painter- depicted mothers and children
Catlett, Elizabeth- African American female sculptor and printmaker
Chagall, Marc- Russian born painter- used dreamlike images in his work
Chase, William Merritt- American Impressionist painter- scenes of Long Island, NY
Church, Frederic Edwin- American Landscape painter- Hudson River Valley, NY
Close, Chuck- American Artist (still alive) who paints huge paintings from a wheel-chair
Dali, Salvador- Surrealist painter and filmmaker
Da Vinci, Leonardo- Renaissance artist and inventor best known for Mona Lisa
Degas, Edgar- French painter- best known for his paintings of ballerinas
Disney, Walt- Animator (need I say more?)
Douglas, Aaron- African American Artist- part of the Harlem Renaissance
Escher, M. C. – Dutch Graphic Artist who created optical illusions through his work
Gauguin, Paul- Painted people and places in Tahiti and the South Pacific
Moses, Anna Mary (Grandma Moses)-American Painter
Miyazaki, Hayao- Japanese animator- "Princess Monoke"
Hockney, David- British Painter who still lives and paints in California
Homer, Winslow- illustrated battle scenes from the civil war to sea-landscapes of US
Klee, Paul- abstract artist from Switzerland
Lawrence, Jacob- African American Painter- some paintings of sports in action
Lichtenstein, Roy- American pop artist who did comic strip-like paintings
Matisse, Henri- French painter who is well remembered for his Jazz inspired cut outs
Miro, Joan- Abstract artist from Spain
Mondrian, Piet- Dutch artist known for his abstract block-like paintings
Monet, Claude- French Impressionist painter who painted landscapes outside
Munch, Edvard- Expressionist painter from Norway- did "The Scream"
O' Keeffe, Georgia- American painter- painted city scenes, huge flowers, and the desert
Pippin, Horace- Black American Artist- part of the Harlem Renaissance
Raphael, Sanzio- Renaissance painter
Rembrandt, Harmensz van Rijn- Dutch painter- scenes of 17th century Holland
Rubens, Peter Paul- Baroque painter from Flanders
Seurat, Georges- French painter- invented pointillism- did circus scenes, etc.
Van Gogh, Vincent- French painter- mental illness- work sells for millions
Van Dyck, Anthony- Flemish painter who was a master painter by 14 years old
Vigee Le Brun, Elizabeth- French Female painter who painted portraits for royalty
Warhol, Andy- American pop artist- did the multiple images of Marilyn Monroe
Whistler, James McNeil- American painter and printmaker- famous for "mom painting"
Wyeth, Andrew- American painter who did very realistic paintings of Native Americans

Phase 1

The search is on!

1. Look up your artist on the card catalog computer (which is *Athena*) and try to find a book about your artist in the library.
2. Look up your artist on the Encarta Encyclopedia computer and write that information down. Don't forget to write the source for your bibliography.
3. Look up your artist in one of the encyclopedias from the reference section. Write the encyclopedia down for your bibliography.
4. On the Internet computer, go our on-line classroom by clicking on the Netscape Navigator Browser. When the NGMS web-site finishes loading, find the location bar at the top which displays the web-site address. Delete that address and type in: http://artmosphere.homepage.com and wait for the ARTmosphere to finish loading. Enter the ARTmosphere and go to ARTIST IN THE SPOTLIGHT page and follow directions. You can either search for your artist's name in one the web-sites that I have listed or search for them by using a search engine. Use that artist last name as the KEYWORD. When you find information about your artist that you will be able to use in your paper, write down the address which is at the top of the computer screen. (Example: www.wwar.com/artists1.html) You will need that address later when you give the resources you've used in your bibliography.

If you find an image of an artwork, you should save that image in your class period folder. First, click on the image with the right side of your mouse. Click on the save image as. Look in the "C Drive" for the "My Documents Folder" and then double click. Then, look for that says this period. For the file name, write your first and last name. Remember that if you save the image on that computer, you'll need to work at that computer all week until you're finished with your work. Go back to the web-site that you got that image from and write down the web-site for your bibliography.

Use other resources in the library like encyclopedias, books, and computerized encyclopedias to add to your collection of information. Try to find at least 3-4 sources of information for this project. Write them down for your bibliography **now** so you don't forget where you got your information.

A. How do I write a web-site in my bibliography?

Web-site:

Author (if known). "Title of Item." [Online] Available: http://address/file_name, date of document or download.

Example of web-site with one author:

Uzalac, Coni Porter. "Artnoir's African American History 101." [Online] Available: http://www.artnoi.com/index.catlett.html. November 28, 1999.

Example of web-site where you don't know the author:

Author Unknown. "Artstar: Wassily Kandisky." [Online] Available: http://www.artstar.com/bin/artist_detail?ARI_ID=430&v=bio. December 4, 1999.

B. How do I write my other resources in my bibliography?

Books:

Author. Title. Place of Publication: Publisher, Copyright.

Example of book with one author:

Ernst, Bruno. The Magic Mirror of M.C. Escher. New York: Barnes and Noble Books, 1994.

Example of book with two authors:

Laliberte, Norman, and Alex Mogelon. Drawing with Ink: History and Modern Techniques. New Your: Art Horizons, Inc., 1970.

Example of book with four or more authors:

Mangan, Kathleen Nugent, et al. Lenore Tawney: A Retrospective. New York: American Craft Museum, 1990.

Example of book with one editor:

Stein, Susan Alyson, ed. Van Gogh: A Retrospective. China: Hugh Lauter Levin Associates, Inc., 1986.

Example of book with two editors:

O'Brien, M. & Sibley, N. eds. The Photographic Eye: Learning to See with a Camera. Massachusetts: Davis Publications, Inc. 1995.

Example of on-line encyclopedia (like the ones in the media center)

"Maria Martinez." Encyclopedia Britannica CD. 1998 ed.

If you find a resource that doesn't fit into one of the above descriptions, ask your teacher or a media assistance for help in writing it in your bibliography.

Phase 2

Show off your work!

Okay, you are ready to do something with all that great research you've done. Today, you will begin your report to show off your artist biography, images, and bibliography!

To make a document using Word '97

1. Double Click on the Word '97 document folder and then double click one "create a new document."
2. Then, double click on "Blank Document." This should open up a new page.

To save your document

1. Under the File menu, go to "save as" and look in the [C:] Drive for the "My Documents" folder. Click on your class period's folder.
2. Save your website as your first and last name.
3. When you've saved your document once, you only have to click on the disk icon (or picture) at the top of your screen to save. Save your document every 5 minutes just in case the lights flicker or you accidentally lose some information.

To "Insert" your image in your document

1. Go to the **Insert** menu at the top tool bar. Click on **Picture** and then from "From File."
2. If you've saved an image on your computer, look in [C:] Drive to find the "My Documents" folder and click on class folder for whatever period you are taking this class.
3. If you've saved an image on a disk, look in 3 _" Floppy Drive [A:] and click on the picture file you want to import into your website.
4. You can then move the picture, enlarge it, or reduce it in size.

Type your research into your document as we've discussed in class. Two or three paragraphs for yourself or one page if your working with a partner. Be sure to include your bibliography at the bottom of the page. When you're finished with your paper, then you can play with fonts and "WordArt" to change the appearance.

Phase 3

Introduce your artist!

Now it's time to let the rest of us get to know your artist. You have become the class expert on who this artist is and what they did in their artwork. Think about what interested you the most about this artist and find an interesting way to tell the class about it. You can dress up like the artist, show us pictures of their work, or anything that will get your classmates attention.

Prepare to speak for 3 to 5 minutes. Your classmates will be evaluating you on your presentation so be sure that you are prepared with your materials and do a good job. These are two aspects of your presentation that they will be thinking about as you speak:

-Did the student seem to know enough about their artist?
-Did the student speak loudly in a slow and clear voice?

On Wednesday, you will do your presentation. Turn in this handout on Wednesday and I will record your grade on this project. I will also record the evaluations from your peers (your classmates) so that you can see what other people thought about your presentation. When you finish your presentation, turn in your final draft of your research paper to me.

In the space below, write your ideas for your presentation. Also write down what other materials you will need to bring from home. If you would like to use the overhead projector or an opaque projector for your presentation, let me know before your presentation.

_____

_____

_____

_____

We will be videotaping the presentations on Wednesday and watching the video on Thursday so that you can evaluate yourself. The grading rubric below is how your grade on this project will be determined. Turn this in on Wednesday and I will record your grade.

Grading Rubric on this project
(Remember I'm looking for quality in each of these parts):

Biography on your artist	____ out of possible 25 points
At least 1 saved image inserted into your paper	____ out of possible 25 points
Bibliography to show your resources	____ out of possible 25 points
Presentation (phase 3)	____ out of possible 25 points
Final grade on this project	____out of possible 100 points

Appendix G:

Interview Questions

Interview Questions

Note to the Interviewer: In interviewing the student, let questions emerge from the immediate context and nature of the conversation. There does not have to be a precise wording of the questions below or the order of when they are asked. The objective of the interview is not clear-cut but rather a reflective expression of ideas and feelings. Keep these points in mind as your interview:

*Respect the culture of the group being studied.
*Respect the individual being interviewed.
*Be natural.
*Ask the same question in different ways during the interview.
*Ask the interviewee to repeat an answer or statement when there is some doubt about the completeness of a remark.
*Wait and be patient for the reply. It is often necessary to let the interviewee think before further prompting him or her.

In case the student doesn't understand the question, I've given you at least one other way to say it. I've also given you ideas for prompts in case a student only gives a yes or no answer.

Introduce yourself. My name is Debra Wiggins (or Mrs. Wiggins) and I'm going to ask you a few questions about the research project you've been doing in art. We are videotaping our conversation so that I can be free to talk freely with you without writing everything down. Be honest in your answers. What you say will in no way affect the grade you receive in this project.

1. First of all, What was the most important thing you learned in researching your artist?
Or ... What sticks out in your mind that you've learned in this artist research project?
Or ... What will you remember the most about researching your artist in this project?
Why? Really? Tell me more...

2. What was the biggest roadblock or difficulty researching this artist on the Internet?
Or... What did you have the most problems with during this project?
Why do you say that?

3. Would you be interested in more art history lessons that use the Internet? Why/ why not?
Or... How do you feel about using the Internet to learn about artists and art history?

Appendix H:

Transcript of Interviews with Students

TRANSCRIPTS OF STUDENT INTERVIEWS

The following is the transcriptions taken from the videotape of interviews with students on the last day of the research process. Names have been fabricated.

Student Respondee 1- Nikki (white female) Nikki answered on her questionnaire that she has a computer with Internet access at home that she spends more than 5 hours a week with. She rates herself on an intermediate level using the Internet.

Interviewer: She's already told you that my name is Mrs. Wiggins and this doesn't affect your grade in anyway. It's just to find out how this research project on the Internet went. The first question is what was the most important thing you learned in researching your artist?

Nikki: You mean on the Internet? Um...

Interviewer: Another way of wording would be: what do you remember most about researching your artist?

Nikki: How we got to use the Internet and stuff.. That was really fun. It's a lot better than books.

Interviewer: Have you used it before?

Nikki nods yes- I have it at home.

Interviewer: What was one of the things you liked about it?

Nikki: How she had her own homepage and you could go there with all of our links and stuff.

Interviewer: What was the biggest roadblock or difficulty you had during this project?

Nikki: It took so long. Computers were really slow.

Interviewer: Anything else- any other difficulties?

Nikki: **Not really.**

Interviewer: Would you be interested in more art history lessons using the Internet in other projects?

Nikki: Yeah

Interviewer: Why?

Nikki: **You mean in art or other classes?**

Interviewer: In the art classroom.

Nikki: **Oh, yes. It's easier.**

Interviewer: Thank you very much.

Student Respondee 2: Renita (black female) (nervous, didn't want to be video taped so I let her sit on the other side of the room and kept the recorder on so it could at least record her voice.)

Interviewer: First of all, my name is Mrs. Wiggins and she's already told you she's doing this for you art project on the Internet. What was the most important thing that you learned in researching your artist?

Renita: Hmmm let me think about that. Umm.. The most important in researching her.. I guess was that that I had never heard about her *(Elizabeth Catlett)* or anything about her before this project. I now know more about her. Her pictures....

Interviewer: And who was it that you were researching?

Renita: **Elizabeth Catlett.**

Interviewer: Oh, ok. Very interesting. You learned a lot about her and you actually enjoyed doing it.

Renita: **Yes!**

Interviewer: Great! Ok. What was your biggest roadblock?

Renita: **Yes, different pictures from different galleries. Lots of ... I got frustrated and almost wanted to quit and everything, but...**

Interviewer: Mostly, Anything else that got you really frustrated?

Renita: No, not really.

Interviewer: Would you be interested in most art history lessons using the Internet in other projects?

Renita nods yes. Because it was fun I like it.

Interviewer: (Clarifies) What part of it?

Renita: You get to do stuff by yourself. The Internet is. .. I can't explain it.. you can look up things by yourself...I don't know. You can use it .. to look up somebody.

Interviewer: any other questions about it?

Renita: not really

Student Respondee 3: Jay (white male) On Jay's questionnaire, he said that he has a computer with Internet access that he uses between 2-5 hours a week. He rates himself on an intermediate level using the Internet but I know from teaching Jay 2 semesters prior to this class that he is very advanced for being in middle school. Jay is academically gifted and I often have had to create extra enrichment assignments for him while he waits for the rest of the class to catch up.

Interviewer: As Mrs. Harrell said, My name is Mrs. Wiggins- I think she already told you that..and I'm going to ask you a few questions about your project. The questions I'm going to ask you have nothing to do with your grade. You can take as long as you'd like to answer them.

Jay: Good, I'm finished with my PowerPoint and I have nothing to do right now. I'm waiting for my dad to transfer my PowerPoint to a CD-ROM 'cause it's so big. So I really have nothing to do and I'm just exploring at the website- her ARTmosphere thing right now.

Interviewer: First question.... What was the most important thing that you learned in researching your artist?

Jay: Ah, I guess how he creates his artwork and uh... like some of his early works that I wasn't really too familiar with.

Interviewer: Oh, ok. Who was your artist?

Jay: Akira Tyokima.

Interviewer: Oh, my, you picked someone interesting.

Jay: I had already done.. ah, let's see.. I've had 2 years in her class with this project. I've been in her class 2 years, this is my 3rd time being in her class.. I've already done Donatello and Michelangelo and this time I decided to do an Anime artist- like someone that would interest me. That's why I choose Akira Tyokima.

Interviewer: That's good. So that was the most important thing you learned?

Jay: Yeah, interesting.. Yeah, It's kinda funny. You know like some stuff about them and then you find out the new stuff and you're like "wow. I never knew that."

Interviewer: Someone who interested you that benefited you?

Jay: The Anime.. That was the benefit of it.

Interviewer: You're pretty proficient on the Internet?

Jay: Yeah, I use it a lot at home. In fact, I'm using it for another project right now.

Interviewer: Second question, what was the biggest roadblock or difficulty you had in researching your artist?

Jay: Oh, God, I had ah.. Everyone else had a minor thing compared to what I had. Translation. Yeah, I found 2 biographies actually 3. One was in Dutch and the others were in German and Spanish. That's what the Spanish teacher said she couldn't do that real well. But she said it was Dutch and I was like ok. And I had another one in Italian. Mrs. Harrell told me about this web-site called freetranslation.com. And they said that hey- What really ticked me off is that they could translate from English to Italian but not the other way around. So I had to go around and I had this one little Spanish timeline. So, I had to translate that. The biggest problems. So most of my resources apparently beyond pictures had to be translated.

Interviewer: So you say you actually used the Internet to translate?

Jay: Yeah, that was nice. That was nice having the thing. I had to break it down into so many parts because the timeline was so long. I had to break it up into like quarters. Because my timeline was so long. I had to do it in quarters. And I was like "thank you!"

Interviewer: I have to have no one else said that. So, several other students said that images were a problem. And for you.. translation was your biggest problem?

Jay: For me, it was language barrier. Yeah.

Interviewer: Well, the last question is would you be interested in more art history lessons using the Internet in other projects?

Jay: Hmmm. It would be interesting. It would be a lot more than, ah, you could usually find in a like dusty book than was like twenty years old.

Interviewer: you think you could probably find more?

Jay: Yeah, you could probably find more about say Thomas Jefferson now than you could find in a twenty-year-old book. They keep finding more out about him.

Interviewer: So, you're saying it's more updated.

Jay: Yeah, More up to date. Constantly.

Interviewer: Any other reason why you choose that, or anything else about the Internet?

Jay: Oh, then you've got the multi-media that you can't really find in a book. And the stuff, like the multi-media in the... ah, CD-ROM encyclopedias. You can't really work with them. You can watch them, fine. But you can't really save it. You can save the pictures but that's about it. You can't... Like, um, for my project, the reason it's so big am I put in a video clip from one of those Animation things. So, you can find it on the Internet but you just can't get that from like a book.

Interviewer: Great, so that sort of lures in for the person watching it?

Jay: Yeah, you get to watch it plus you get to save it.

Interviewer: Great, that's all we have. Thank you very much.

Student Respondee 4: Mark- (Looked nervous but said he wasn't. We didn't video tape on him but on the other side of the room He say he didn't know that it would be videotaped and felt more comfortable without the camera aimed at him. - black male.)

Interviewer: My name is Mrs. Wiggins and she's doing this for your art project on the Internet. The first question is "What was the most important thing you learned about your artist?"

Mark: **Because I like computers.**

Interviewer: Do you know what was it about computers you like?

Mark: **Not really, I just like them**.

Interviewer: Anything else you'd like to add about the project?

Mark: **It was fun, educational, and I'd like to do it again**.

Interviewer: Thank you very much.

Mark: **You're welcome.**

Student Respondee 5: Brittany- black female (Brittany appeared to be nervous and very withdrawn although she's normally not a shy girl. She didn't mind being videotaped though. Mrs. Wiggins talked with her a bit more at the beginning than the others to try to make her feel more comfortable.) Brittany answered on her questionnaire that she has a computer at home but it does not have Internet access. She has however used the Internet before and uses it less than an hour each week. She rates herself as an Intermediate using the Internet.

Interviewer: Ok, My name is Mrs. Wiggins and actually I have a daughter in the sixth grade here at this school. I've been observing with Mrs. Harrell. I think she thought she might influence you... So, I'm just an observer and I'm going to ask you some questions. The first question is what do you feel was the most important think you learned in researching your artist?

Brittany: U m, probably that there, like I guess you could say, the way that they paint and the things that they paint are very unrestricted. I wasn't, some of the paintings, the paintings th at I saw for my artist were very explicit and I didn't realize that the way you lo k at her and like she grew up from Mexico. So you wouldn't think that she would paint some of the things that she painted. It was very like "oh my goodness."

Interviewer: Who was your artist?

Brittany: Frida Kahlo I guess that's how to pronounce it. Very explicit.

Interviewer: Oh, yeah, surrealist?

Brittany: **yeah**

Mark: I learned that he was more than just a painter.
Interviewer: Ok, and then.. what else did you learn?

Mark: He was a sculptor. And, um.. (I think Mark was trying to think of the term printmaker because he mentions in his presentation that Rembrandt was a printmaker)... a .. I forgot, it was on the computer....

Interviewer: Who was your artist?

Mark: Rembrandt

Interviewer: (After a few seconds) Oh, ok, so anything else you learned that you felt was important for this project?

Mark: Not really

Interviewer: Ok, then we'll go on to question 2. What was the biggest roadblock or difficulty you had during this project?

Mark: Oh, finding enough information...

Interviewer: Once you got started did you find enough information about him?

Mark: When I first go started, none of the sites had enough information. Once you found the pictures you had to find the information about him.

Interviewer: Why do you think you had problems, finding information on the Internet?

Mark: With an Internet search you can find it. You just had to search in different places.

Interviewer: Would you be interested in doing more art history lessons that use the Internet?

Mark: most definitely,

Interviewer: Why do you say that? Like, why you'd rather do it on the Internet than in the classroom.

Mark: because I like it, it's fun. It's better than being in the classroom.

Interviewer: Anything that attracted you to the Internet project, like why you would do it again?

Interviewer: That was like a shock for you?

Brittany: Yeah, I didn't expect that.

Interviewer: Did you get a lot from the Internet.

Brittany: Yes, I did. I went to the library but the computer really helped a lot getting pictures and stuff like that.

Interviewer: What was the biggest roadblock or difficulty you had during this project?

Brittany: Oh, something I had saved my picture to the wrong place and had to keep getting back on the Internet to get it because I had saved it in the wrong place. It only like happened one time.

Interviewer: So you saved it in the wrong place and had to get it again?

Brittany: Yes and I had to go back and get it again. That was a setback.

Interviewer: Anything else that was frustrating to you?

Brittany: Only like the little box (the advertisement) above her website. It tries to advertise stuff but I didn't know what it was. I clicked on it and tried to get out of it and couldn't get back. That was really the only thing. Everything else was quite easy.

Interviewer: So the next time you knew not to click on the advertisement, right?

Brittany: Yeah, right, right.

Interviewer: Would you be interested in doing more art history lessons using the Internet?

Brittany: Probably I enjoyed the Internet a lot. It was a lot of fun. I enjoyed it. I like computers a lot and stuff like that. It was fun. I enjoyed it.

Interviewer: Anything else?

Brittany: I guess it's because I feel that computers are something I'm using. And it was that I could finally learned how to save pictures off the Internet and put in my PowerPoint presentation. That was pretty fun realizing that I could do it because I didn't think I could. That was pretty good.

Interviewer: Anything you want to add that you'd just like everyone to know?

Brittany: No, that's about it.

Interviewer: Thank you very much.

Brittany: Ok, you too.

Appendix I:

Coding the Interviews with Students

Students	Initial Response- fun	Initial Resonse- knowledge	Comparision to Traditional Resources	Difficulties?	Ease of using it	Student controlled	Interested the student	Multimedia
1- Nicky	That was really fun		Better than books	Computers were slow	Oh, yes it's easier			
2- Renita	It was fun- I like it	The most important thing was that that I had never heard about her (Elizabeth Catlett) before this project. I now I about her		(finding) pictures from different galleries. I got frustrated and almost wanted to quit		You get to do stuff by yourself. The Internet is... I can't explain it. you can look up things by yourself		
3- Jay		how he creates his artwork and uh... like some of his early works that I wasn't really too familiar with.	it would be a lot more than, ah, you could normally find in a dusty book than was like twenty years old. More up to date. Constantly... multi-media that you can't find in a book.	Translation- It was language barrier			This time I decided to do an Anime artist- someone that would interest me.	Oh, then you've got the multi-media that you can't really find in a book.
4- Mark	it's fun.	I learned that he (Rembrandt) was more than just a painter	It's better than being in the classroom.	When I first go started, none of the sites had enough information.				
5- Brittany	It was a lot of fun. I enjoyed it.	The way tha. they paint and th- things that they pa it are very unrestricted.	I went to the library but the computer really helped a lot getting pictures and stuff like that.	Advertisements at the top of the web-site and sa.ing images	Everything else was quite easy.			

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